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FIRE INSURANCE AND PROTECTION FROM FIRE

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THE average annual loss by fire in America is over half as much as the cost of building the Panama Canal. This is an actual loss. Insurance, of course, restores nothing destroyed, but merely passes the hat for the benefit of the individual losers. The loss to the community is total. There are great benefits to the community from the payment of insured losses. It provides for the continuance of business with the least interruption and removes from individual losers much of the feeling of disaster and panic. This is of great moment to the community, but it does not repay to the community any of the loss actually incurred through the fire. It merely prevents still further loss from delayed recuperation.

But little thought has been given to the communal aspects of the economic system of fire insurance. It has been viewed chiefly from the standpoint of the individual. Insurance companies repay to individuals their actual losses and it is simpler for the individual to gain security against loss by fire by hiring an insurance company to carry his risks than it is for him to prevent loss from fire by building fireproof buildings. Indeed, experience has shown that "fireproof buildings" of the highest grade are not safe against great fires which have gained full headway and sweep in full force upon them from the outside. Fireproof construction of single buildings does not make them safe, if they are surrounded by burnable buildings. In the great Baltimore fire a heat of over 3,000 degrees Fahrenheit was generated, as was shown in three different regions when, after the fire, dentist's porcelains, fusible at that temperature, were found melted by the heat. The best fireproof construction does not protect a building from such temperatures. Marble crumbles; granite, especially if touched by water or its vapor, disintegrates; structural steel warps and twists.

After the Baltimore fire, there was in Baltimore much discussion of fire insurance and a little discussion of fire-fighting, but the author heard only one man mention the matter of fire prevention. Of course, from the standpoint of the prosperity of the country this matter of fire prevention was the one which should have received chief attention.

Two effective methods of protection against fires have been devised —first, fireproof construction and, second, automatic water sprinklers.

Fireproof construction is a safe protection against fires starting within the building, but not against major fires advancing upon the building from the outside. This device is the most expensive yet suggested, and to be effective it must apply to all buildings in a city. Berlin and Paris are pretty well protected in this way, but Tokyo, with its frail house construction and paper partitions, all of highly combustible material, would find this method of protection from fire of prohibitive expense.

Automatic water sprinklers have proved effective, reducing insurance costs by all the way from one third to nine tenths under different conditions. In the Baltimore fire, O'Neil's four-story department store stood in the direct path of the fire, but the curtains of water automatically thrown over its windows prevented the fire entering these and though the fire entered in three places beneath the roof the automatic sprinklers within extinguished it in each place. Indeed it was O'Neil's store, thus protected, which helped turn the fire eastward toward the little stream on whose banks it was finally checked. Water sprinklers are effective and are usually able to confine any internal fire to the room in which it arises, and similarly water curtains, outside windows and doors have proved efficient against fires approaching from without, in the few instances in which they have been tried. But the damage from water is a serious consideration and therefore automatic water sprinklers have by no means solved the problem of fire prevention.

There is need of experimental study of the whole problem of fire prevention—including fireproof construction and immediate extinction of fires at their inception. This subject has never had any real study worthy of the name, in this country or in any other. Roughly speaking, America's annual fire loss is a quarter of a billion dollars,[1] yet the total expenditure in the study of problems of fire prevention has been far less than this sum.

Why is this? Why has this subject been so neglected? The answer is very evident. The economic system of fire insurance, so greatly developed, has removed the individual motive for fire prevention, leaving only the communal motive to urge such protection. Individual security, reached through fire insurance, has made men thoughtless and careless about the loss to the community. It is even true that the collection of insurance serves as a motive for incendiary fires and this to an extent that is an important increment in each year's loss by fire.

The chief need is a government bureau to study experimentally problems of fire prevention in all its aspects. Prevention of forest fires is a very different problem from that of prevention of fires in cities, and this again differs from the problem presented by scattered buildings. We have done something toward the prevention of forest fires, and the Forestry Bureau is giving this problem some good thought. We are doing practically nothing in the study of the problem of prevention of fires among buildings.

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[1] Including Canada. This figure, of course, varies widely from year to year and considerably from decade to decade. If one of the main theses of this paper is correct and all fires in buildings could readily and inexpensively be suppressed before damage occurs, then a large portion of the cost of maintaining our enormous fire insurance system should be included as part of the "fire waste."

The problem is apparently not one of extreme difficulty. There is every reason to anticipate its satisfactory solution after adequate study. In the study of fireproof construction suitable for large public and commercial buildings, structures of many types should be built and burned and scientifically accurate knowledge obtained as to their behavior under conditions paralleling the real conditions of actual fires. Still more important is study of prevention of fires among inflammable buildings. The problem will not be solved until inexpensive methods are devised which will prevent any fire getting beyond the room in which it originates, however inflammable be the material of the building itself or of its furnishings, and the substance used in thus putting out the fire at its start must not be water but must be something that will not itself do damage to the most delicate fabrics. It is quite likely that automatic sprinklers throwing chemical fire-extinguishing substances may be found to meet the need. If it proved best to use substances injurious to human beings, automatic alarms could be used in all chambers or other inhabited rooms to rouse the occupants before the discharge of the deleterious chemicals. But discussion of such details is not appropriate here.

Suppose we should appropriate a quarter of a billion dollars, the amount of a single year's fire loss, to the organization and support of a Bureau of Fire Prevention, calling to the work of this bureau the three best chemists, the three strongest physicists, and the three keenest engineers in the world. How long would it be before they had found very inexpensive methods of protecting all buildings against fire, however inflammable their construction? The problem is childishly simple beside those which men of science are attacking daily and with success.

How absurd it is that we have fires to-day! They should long ago have become a thing of the past. On the Sunday when the great Baltimore fire broke out, the author was standing in the door of one of the churches after service, talking to the Reverend Dr. D'Aubigny, of Paris. When a hook-and-ladder wagon galloped past Dr. D'Aubigny asked, "What is that?" On being told it was fire-fighting apparatus on the way to a fire he said, "Oh! That is something I must see, an American fire. We do not have them in Paris." Paris, without serious study of fire prevention, has taken the expensive method of fireproof construction. We can well afford to use this same method for large public and commercial buildings, but we need also to install in all buildings, as they now are, inexpensive devices that will at once extinguish any fire in the room in which it originates.

The economic system of fire insurance under private management, as it has developed, has suppressed individual initiative in fire prevention, has distracted attention from the real problem and has been the actual cause of postponing its solution for these many years. As developed, the system has proved one of the most colossal economic blunders, as it is one of the most absurd and childish. For thirty years the author has been interested in this subject, but only during the last five years has he seen any discussion of it, either scientific or popular, and never has he found any recognition of the utter economic absurdity of the present system of dealing with fire. There are a few glimmerings of awakening interest. Let us hope they prove an earnest of a genuine and adequate attack upon the problem.